

FIG. 1

10

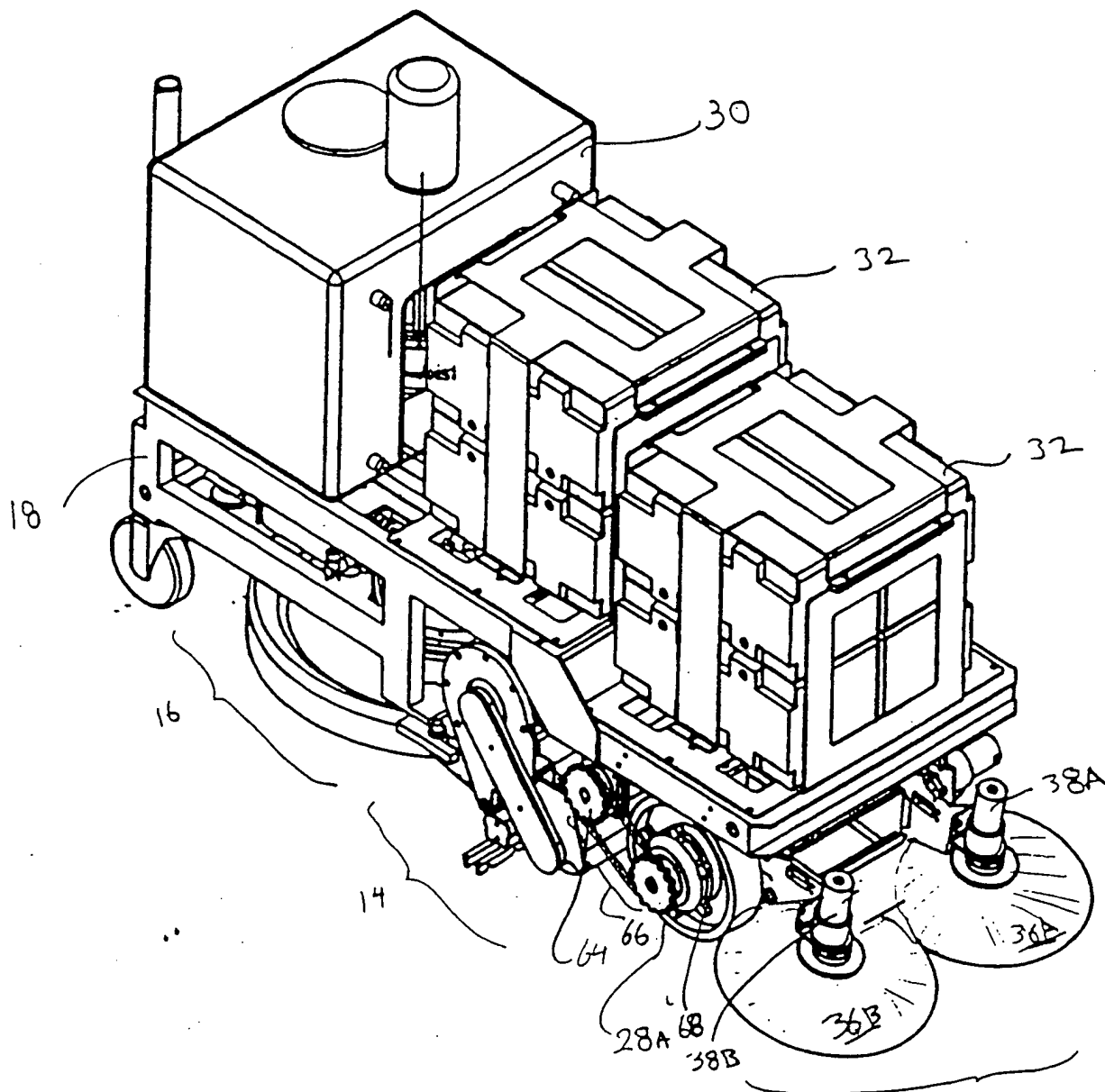
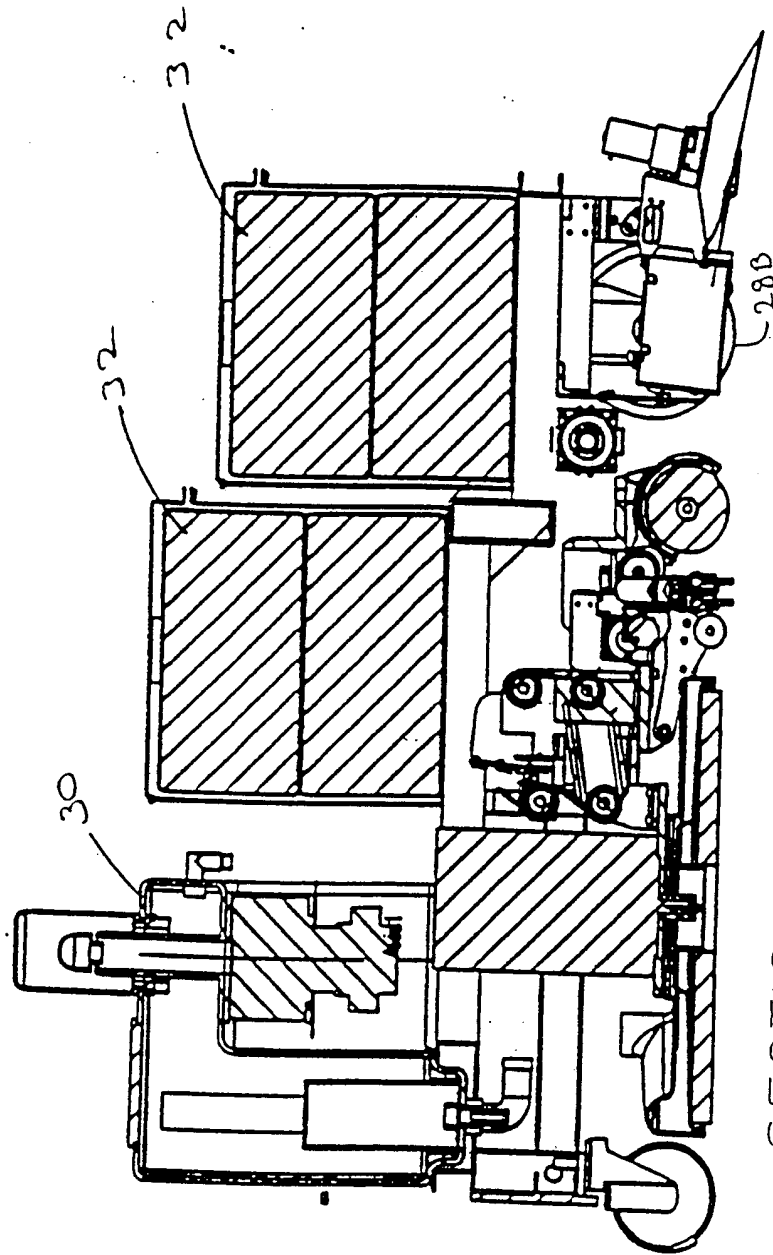


FIG. 2



SECTION A-A

91

一五

12

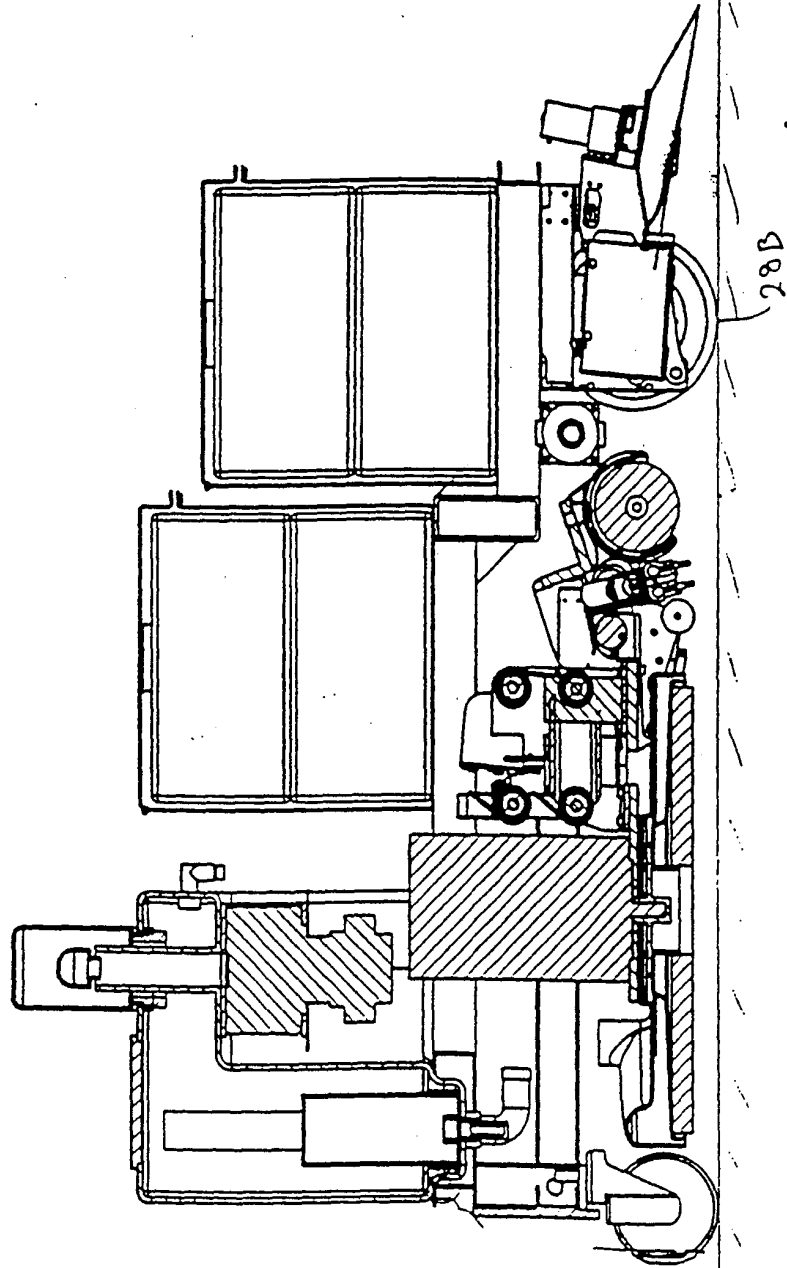


FIG. 3A

12

14

16

12

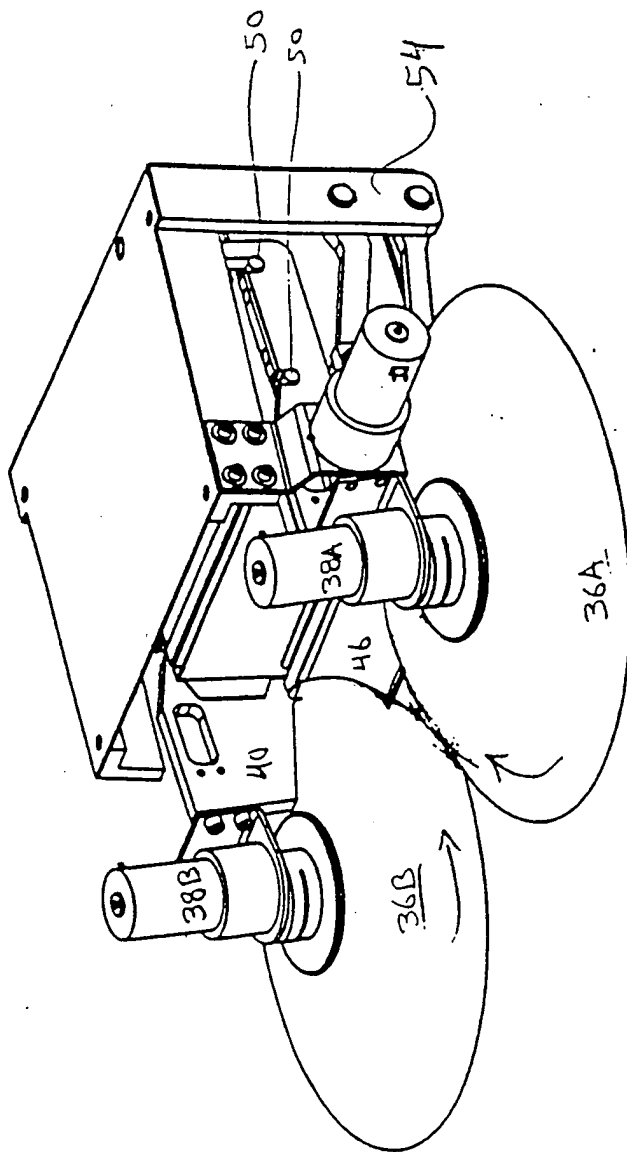


FIG. 4

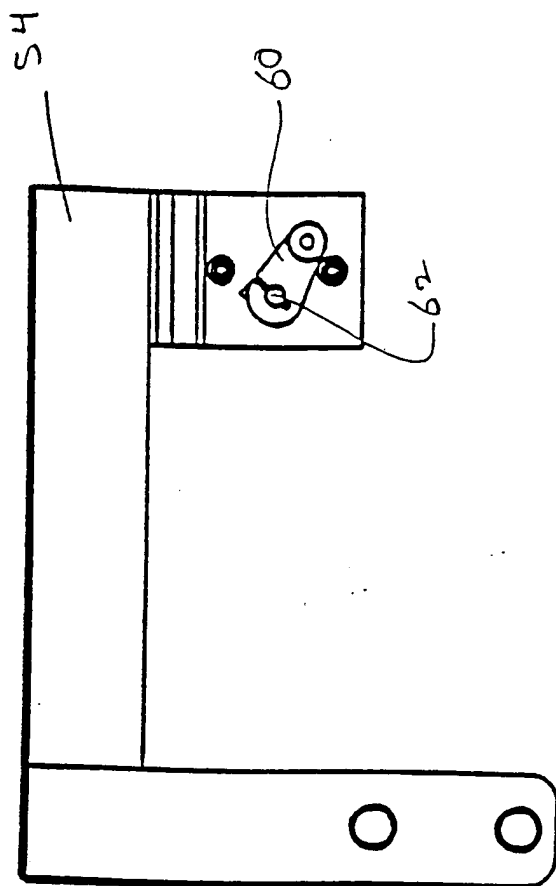
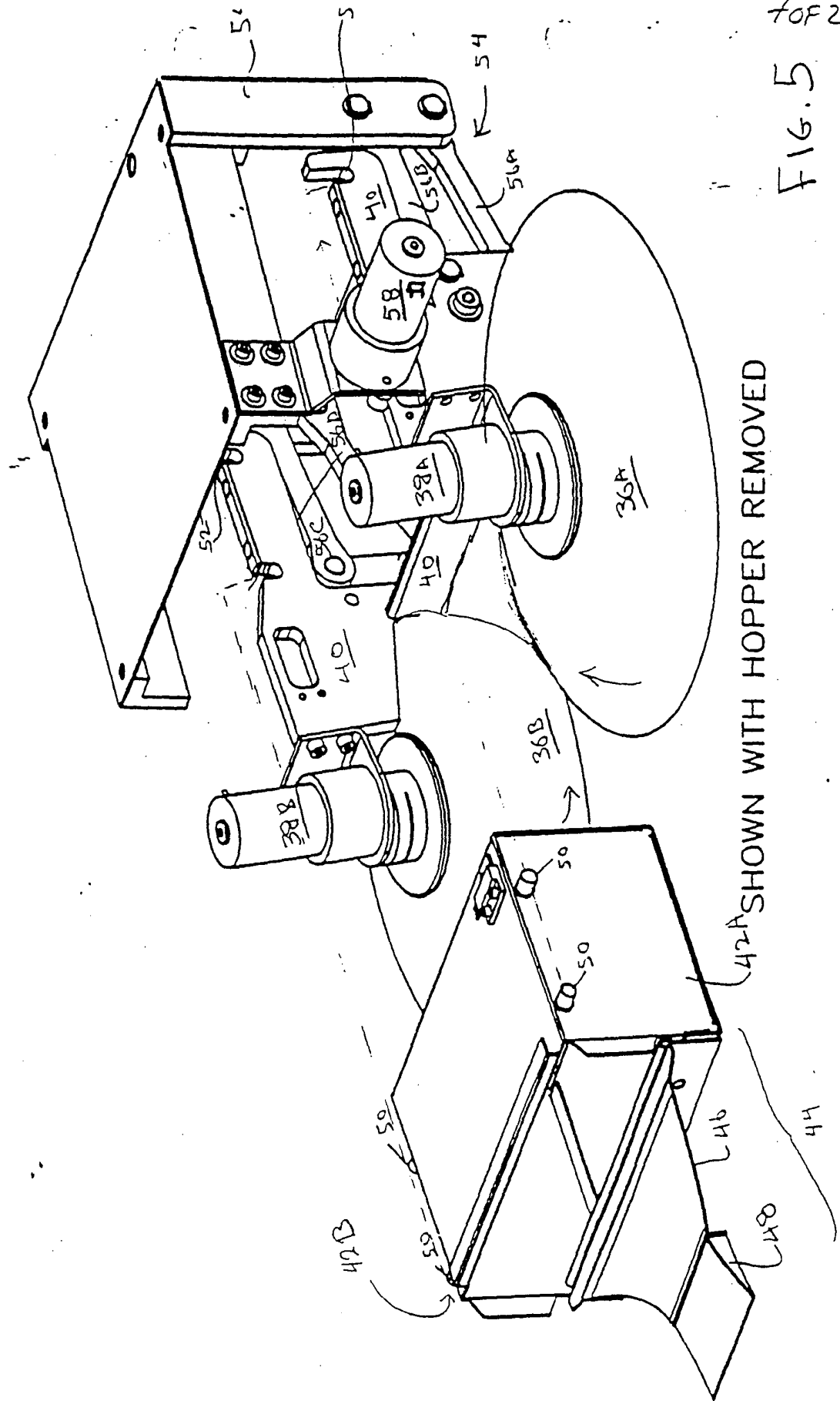


FIG. 4A

FIG. 5

12



12
↙

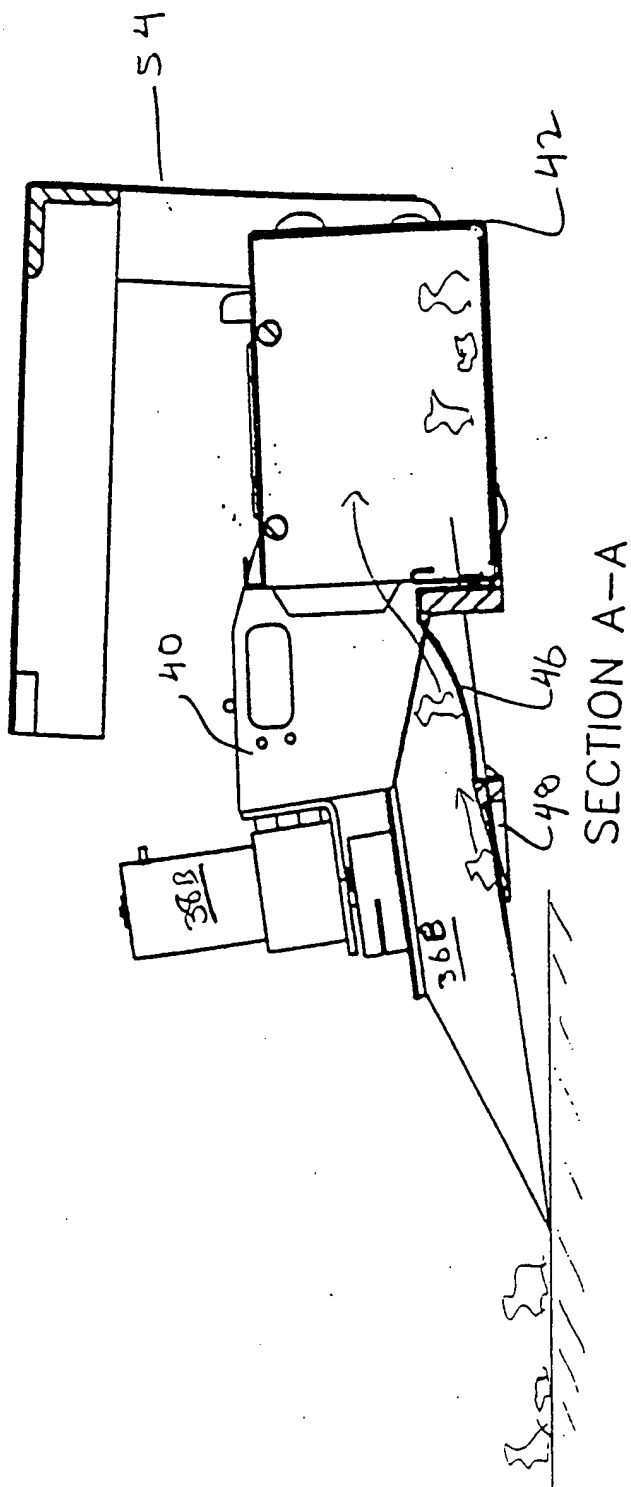


FIG. 6

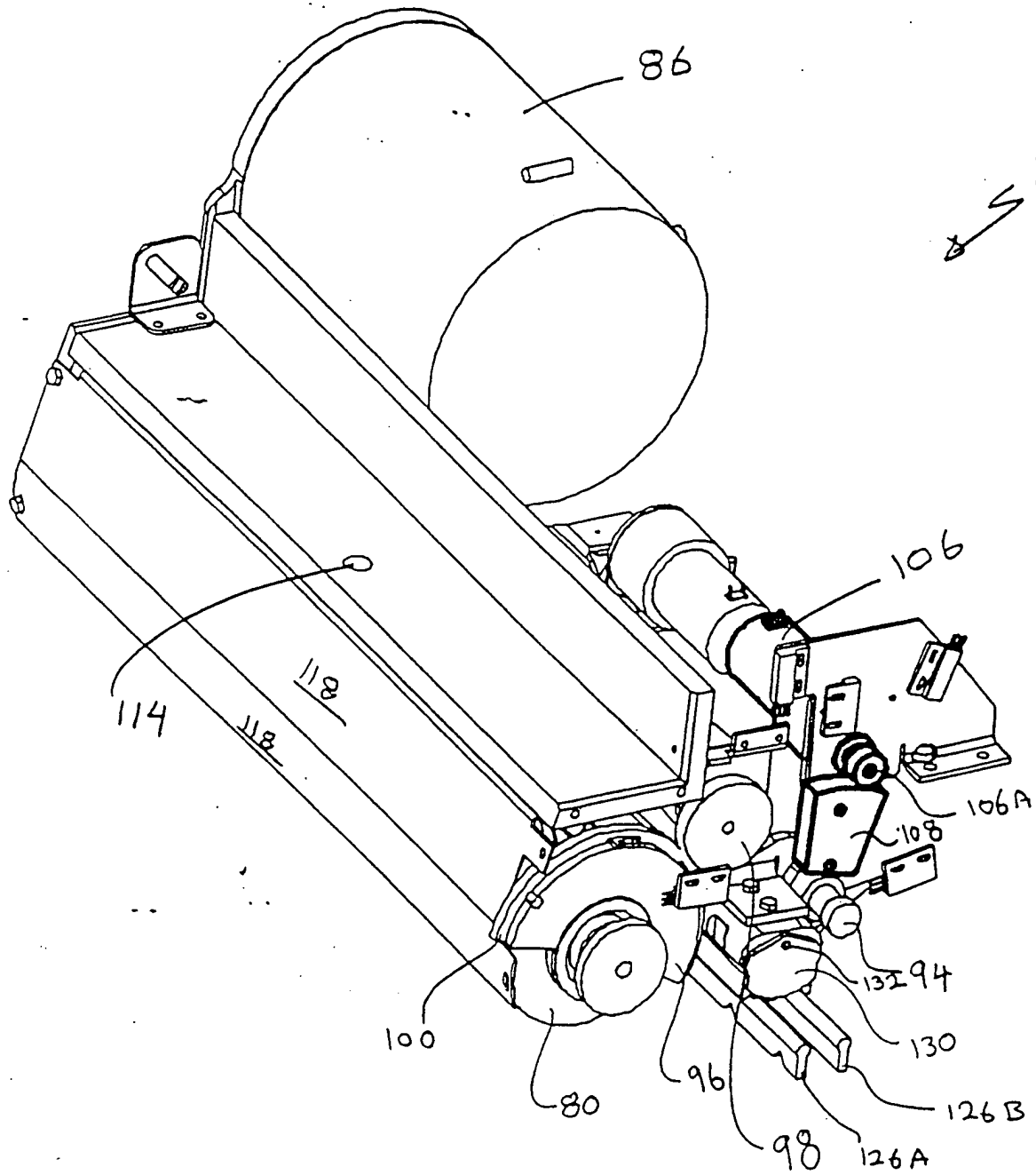


Fig. 7

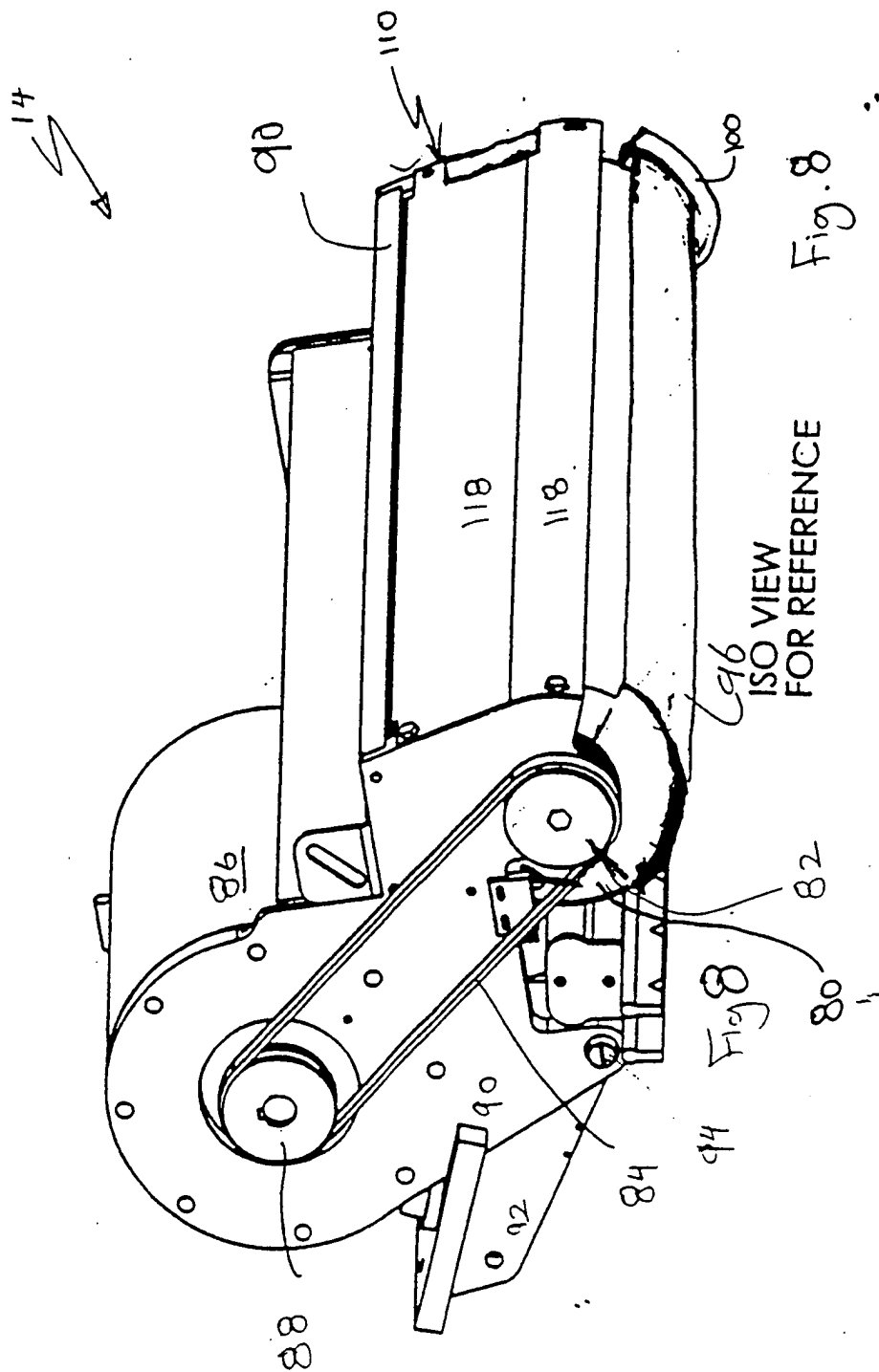


Fig. 9

14

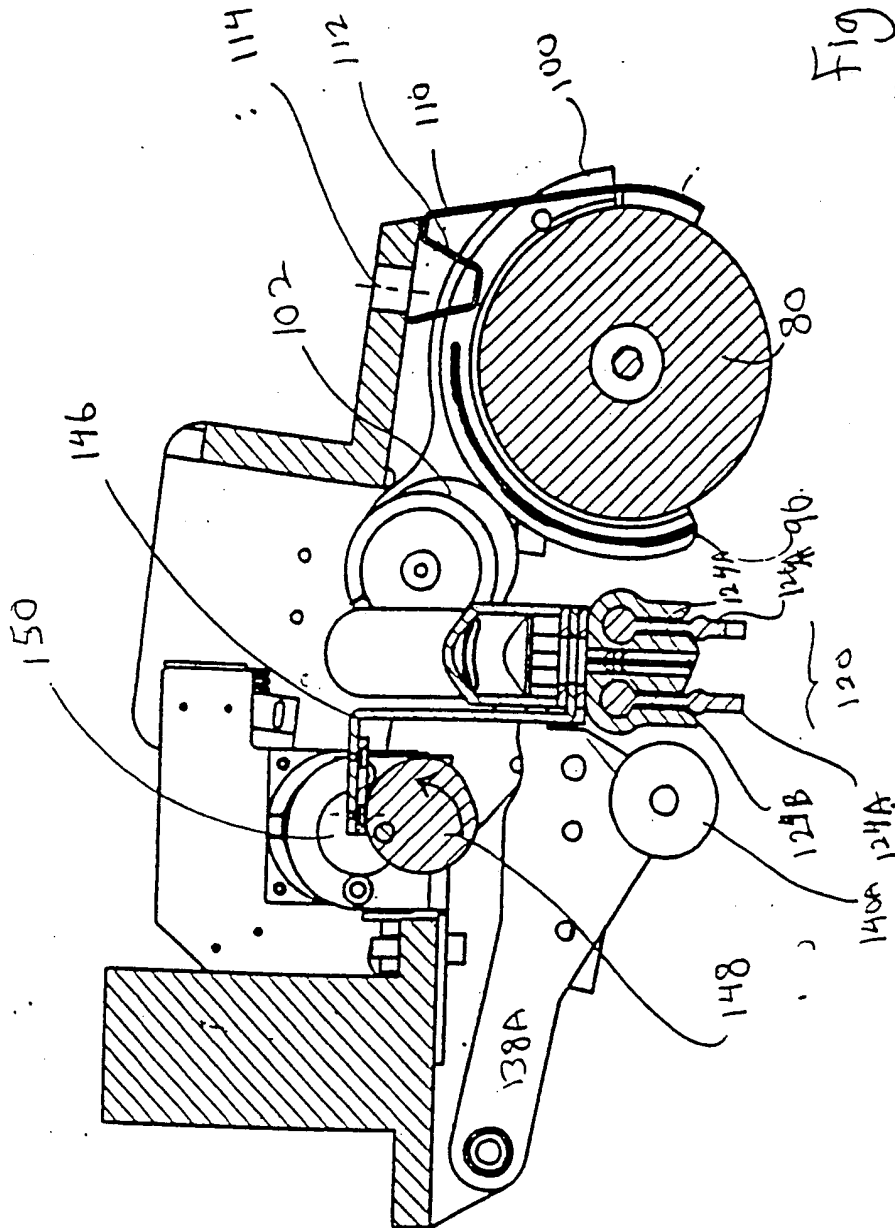
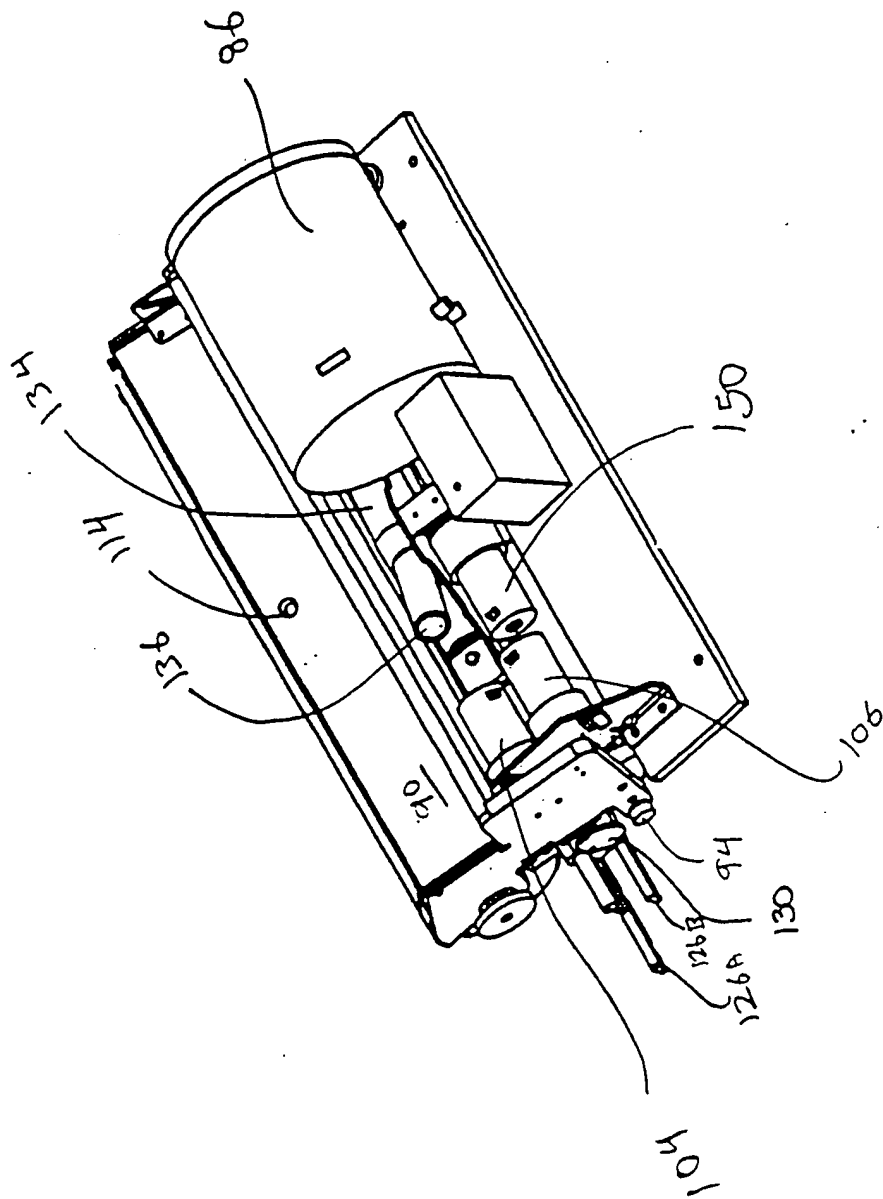
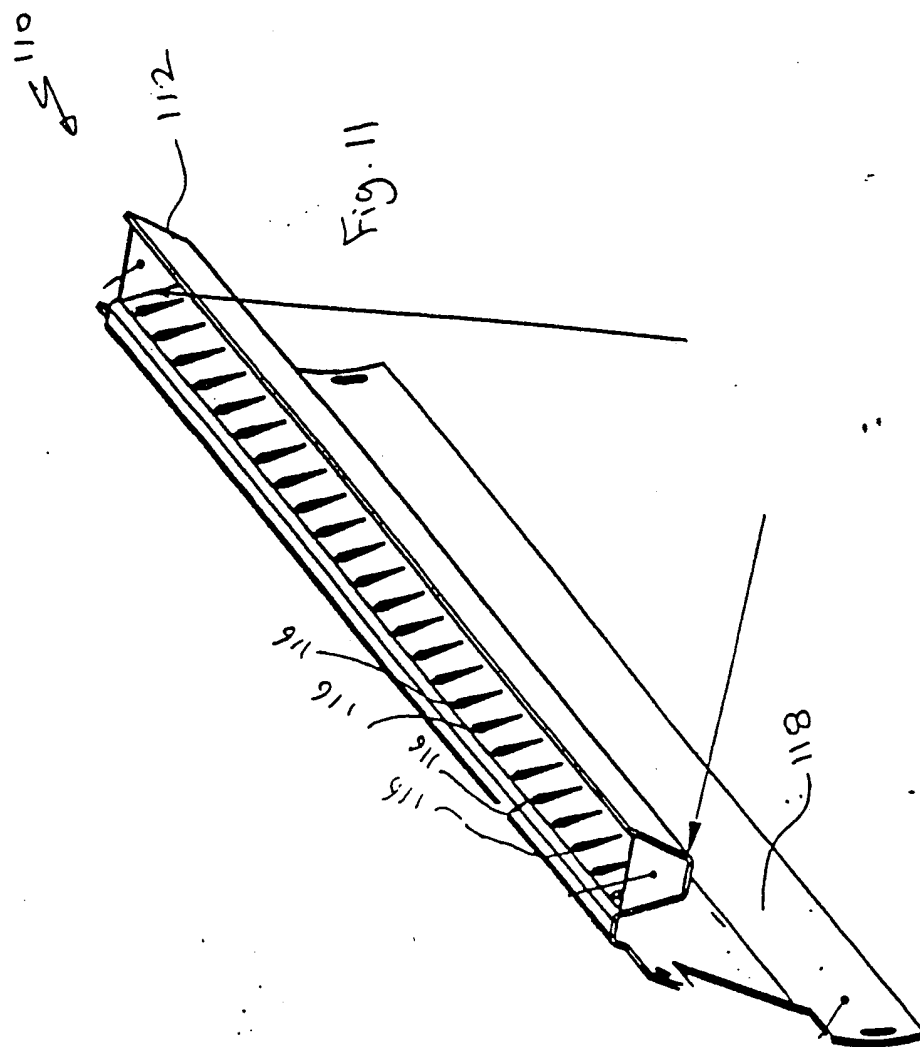


Fig. 10





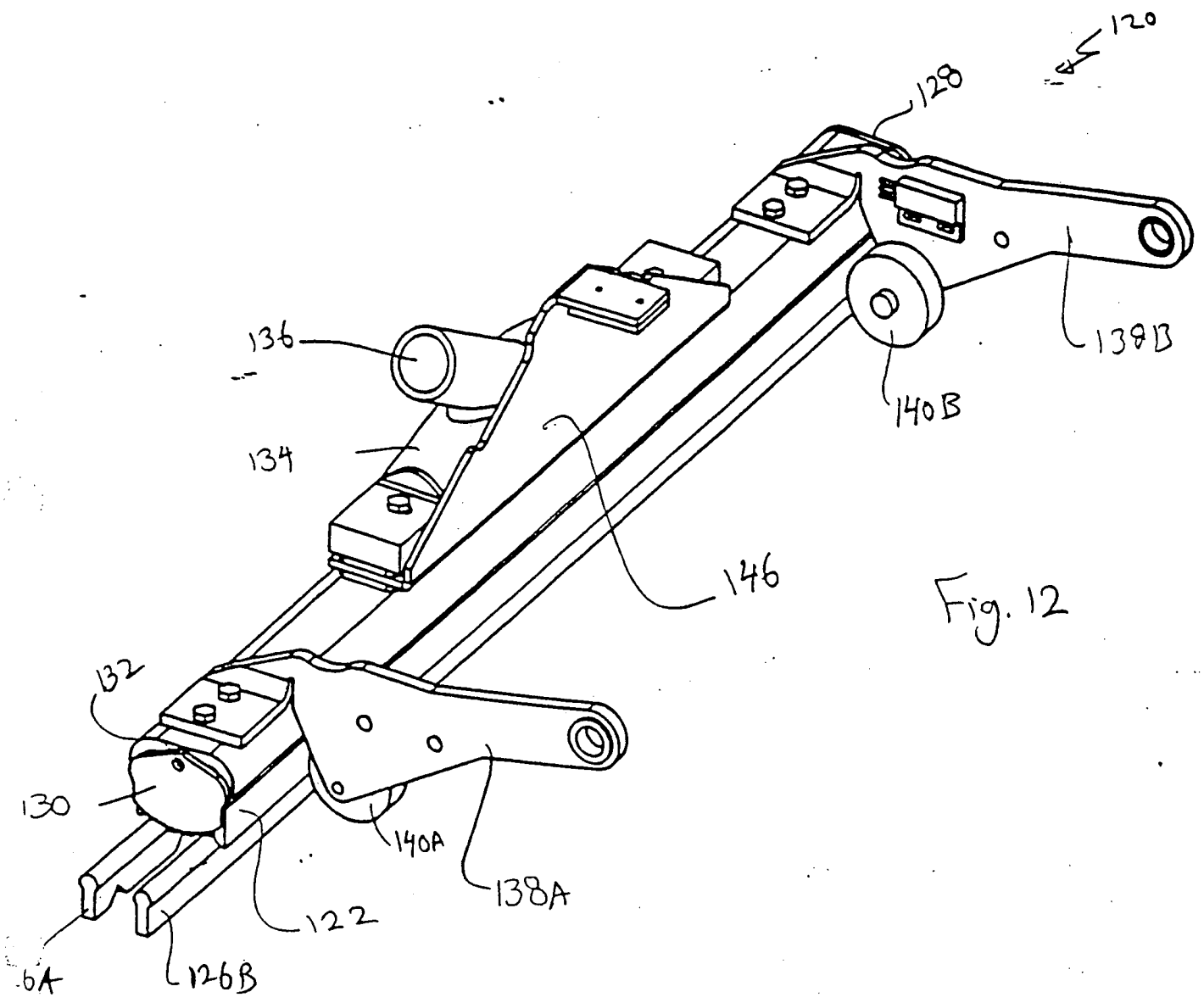


Fig. 12

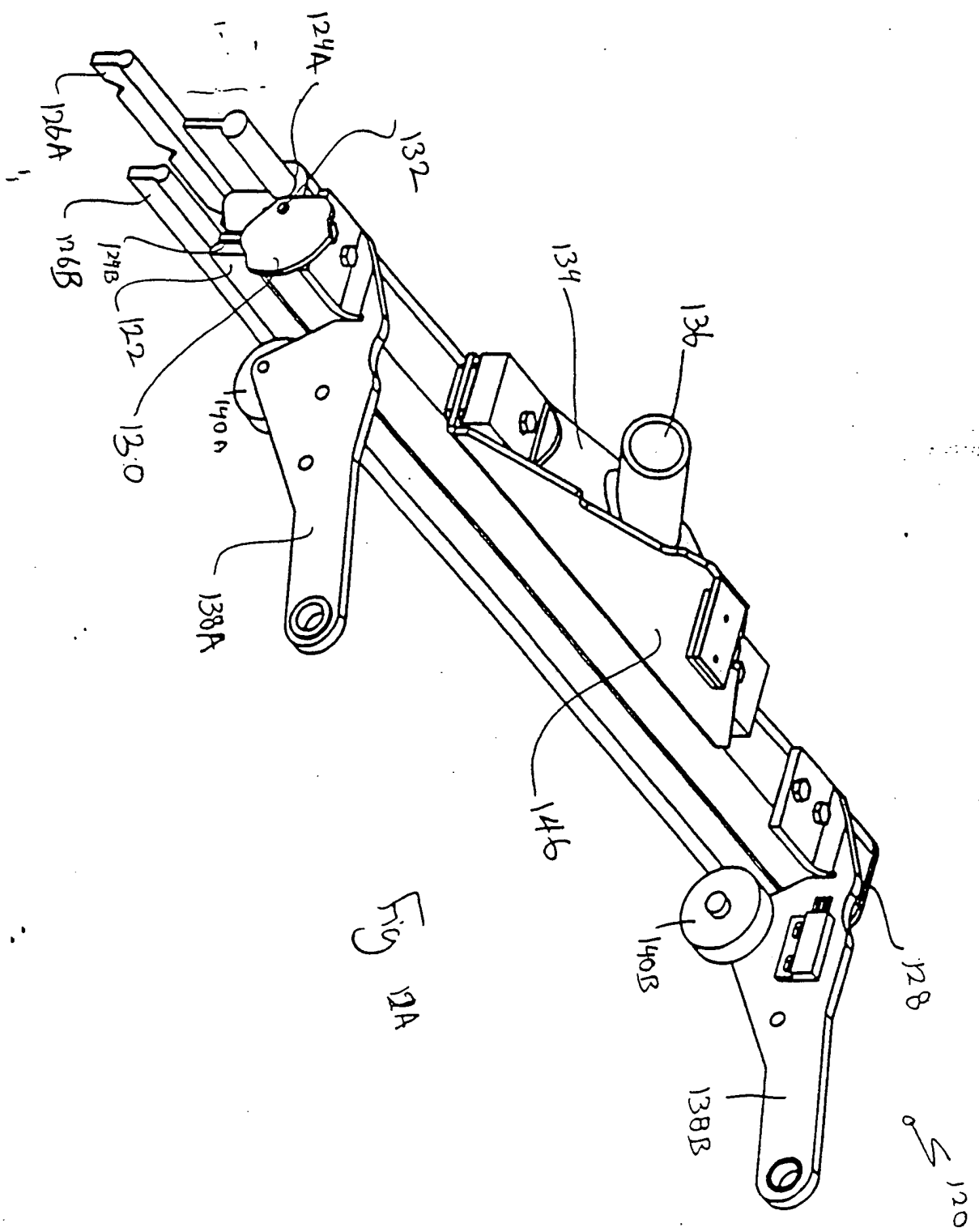
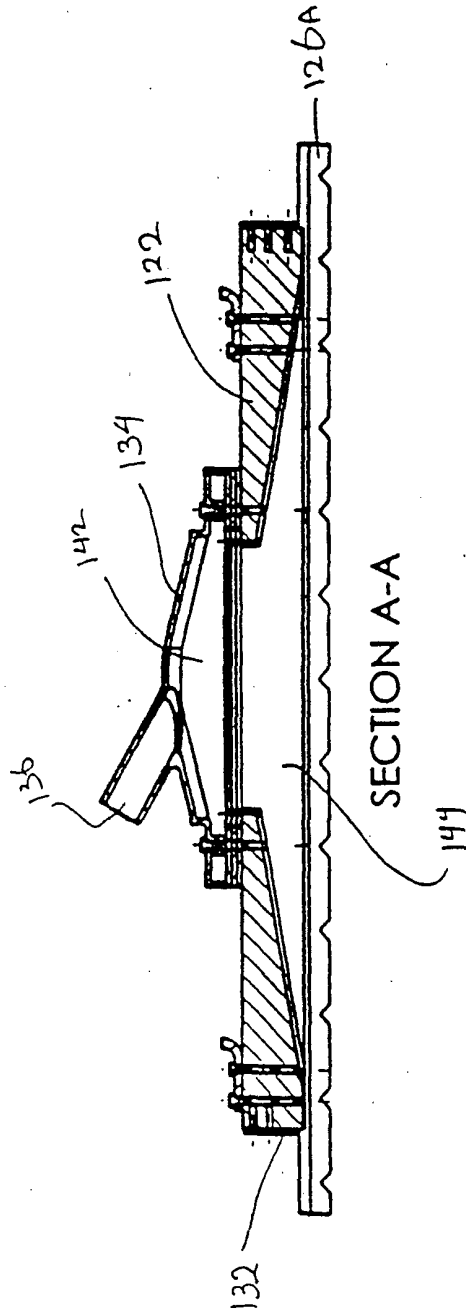
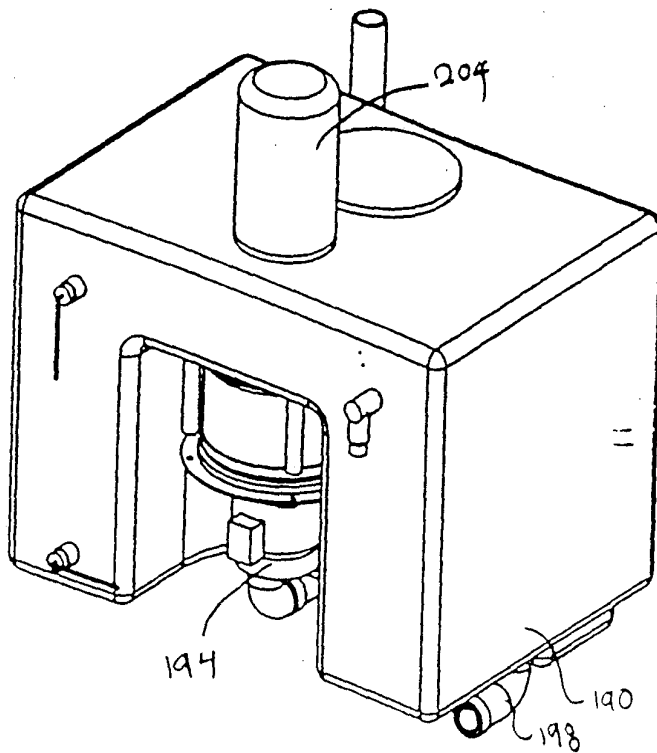
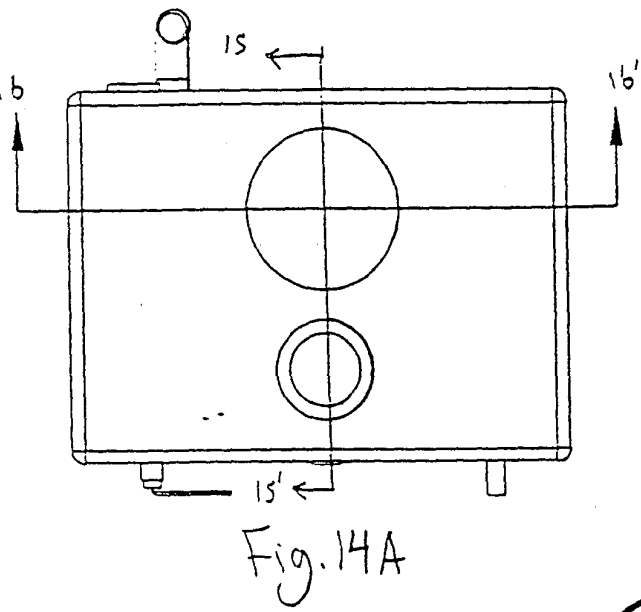
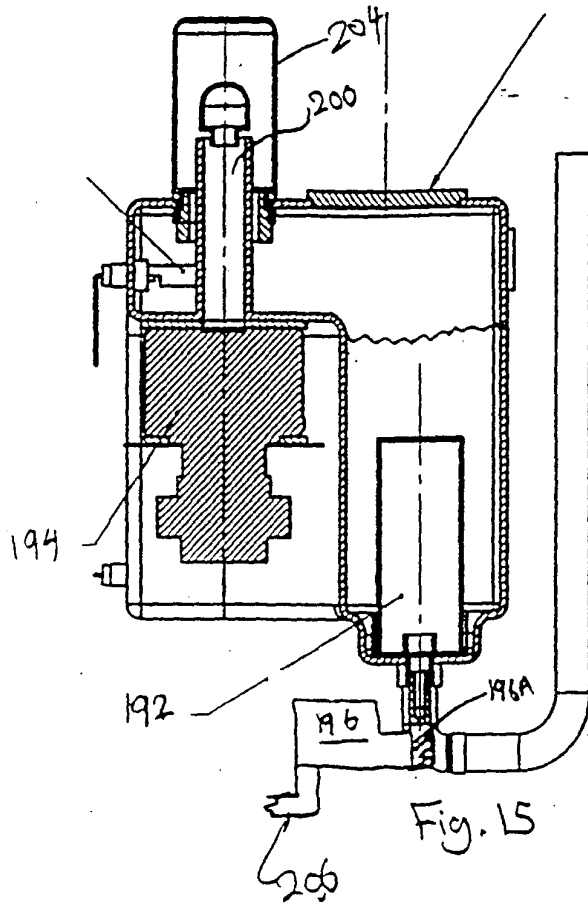
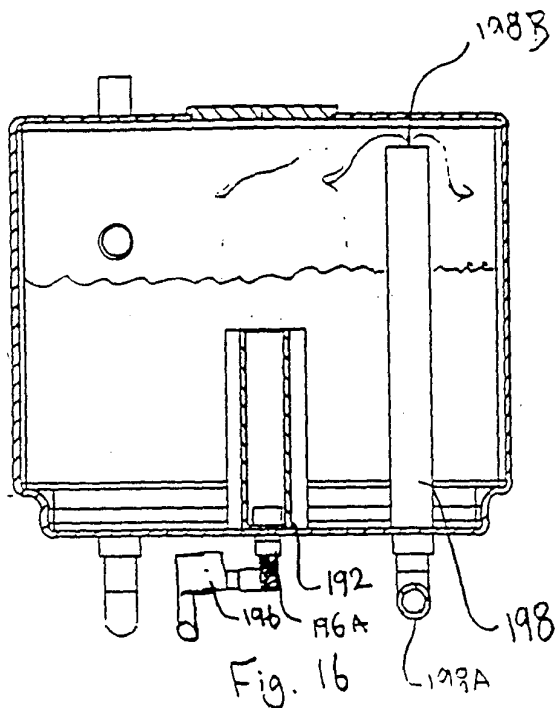


Fig 12A

FIG. 13



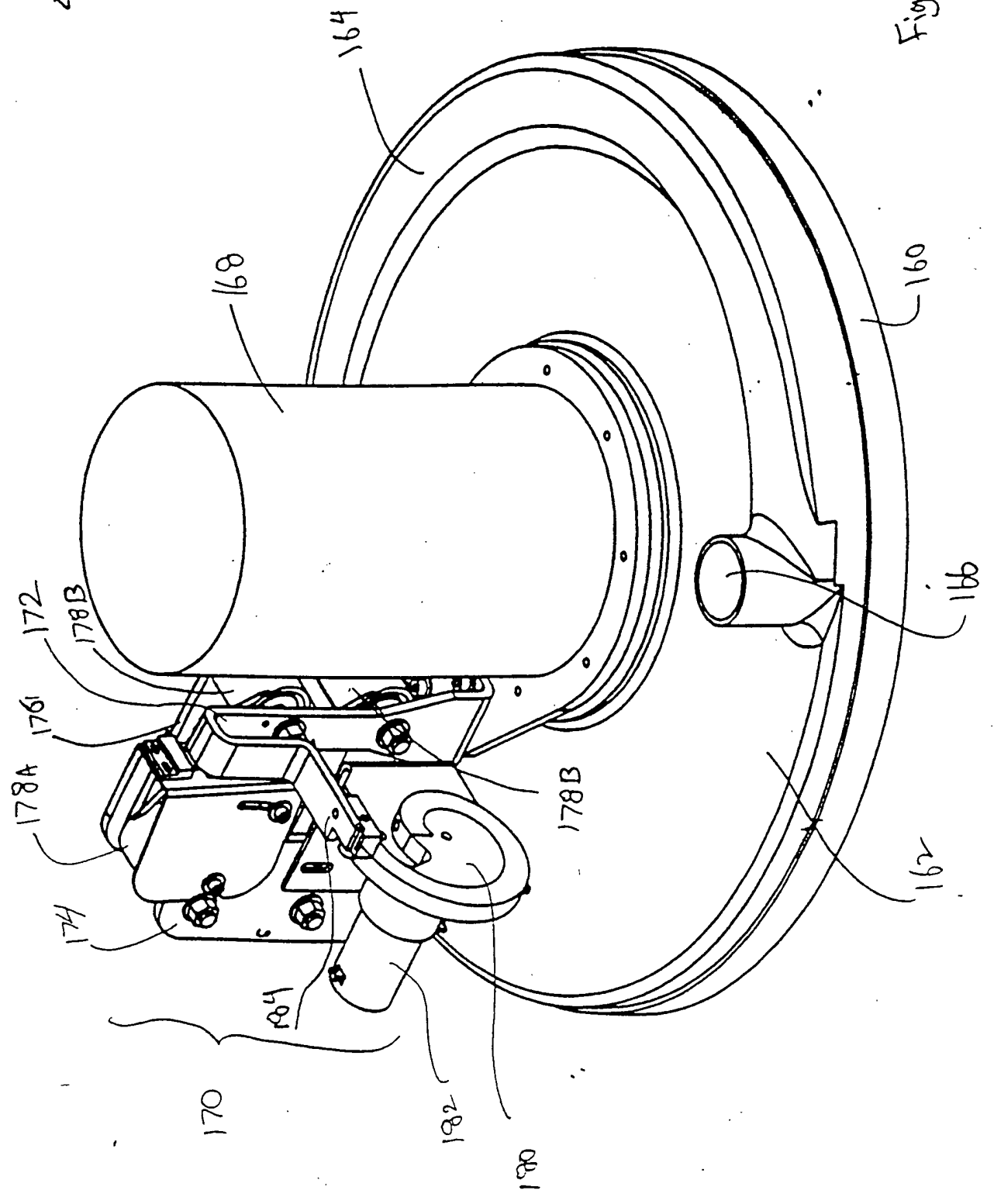


30

Fig. 14

16
↘

Fig. 17



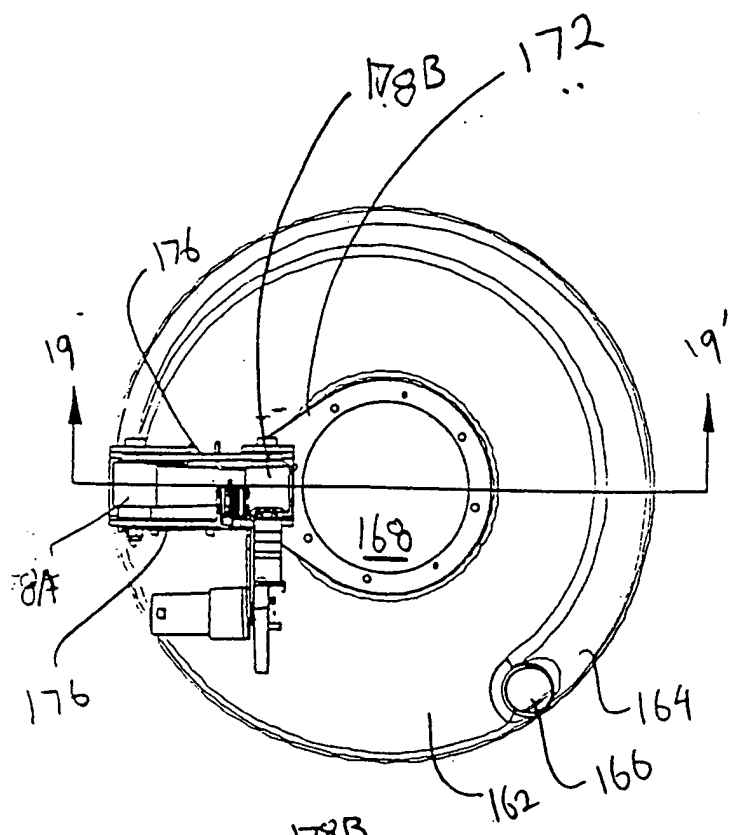


Fig. 18

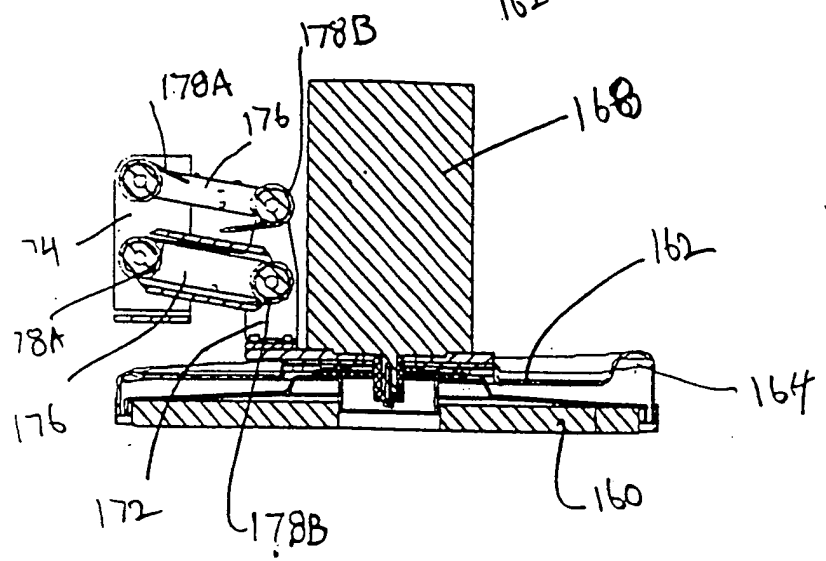


Fig. 19

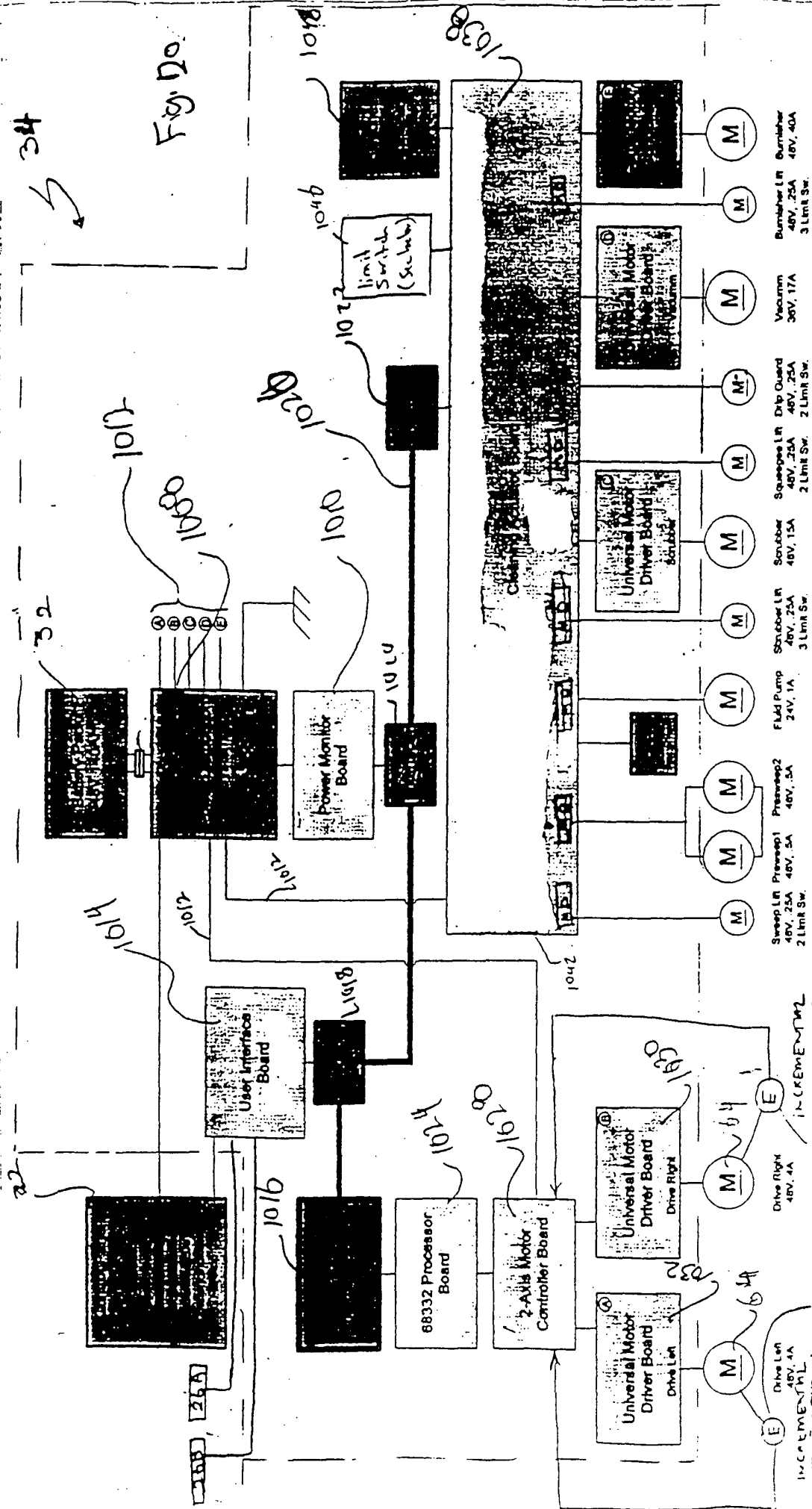


Fig. 20

21 of 28

Fig. 21

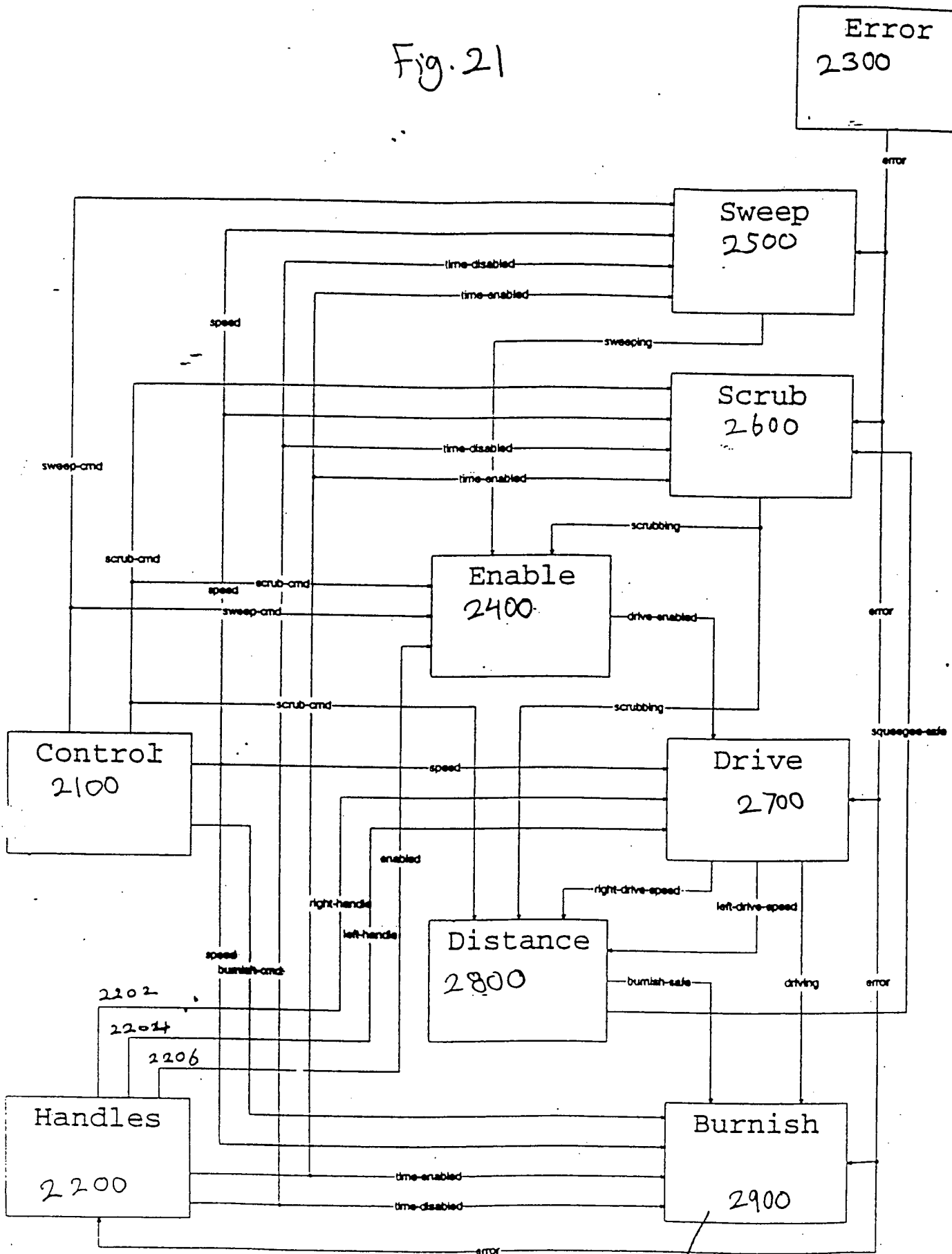


Fig. 24-

2200

HANDLES

variables: enable-time, disable-time

if(NOT error)(

right-handle is ui-right-handle

left-handle is ui-left-handle

] 2202

] 2204

if(right-handle OR left-handle)(

disable-time is FALSE

time-disabled is FALSE

if(NOT enable-time)

enable-time = current time

time-enabled = current time - enable-time

} 2206

else(

enable-time is FALSE

time-enabled is FALSE

if(NOT disable-time)

disable-time = current time

time-disabled = current time - enable-time

} 2208

)

enabled is (right-handle OR left-handle)

} 2210

else(

enabled is FALSE

right-handle is FALSE

left-handle is FALSE

time-enabled is FALSE

time-disabled is FALSE

} 2212

)

ERROR

low level software filters the hopper full sensor

if(ui-hopper-missing OR ui-tank-overflow OR ui-tank-empty OR system-error)
error is TRUE

] 2302

2300

Fig. 22

Fig. 29

24n-28

2800

```

DISTANCE
variable: burnish-distance, squeegee-distance

if(scrub-cmd AND scrubbing){
  if(NOT burnish-distance)
    burnish-distance = 0
  else
    burnish-distance = burnish-distance +
      DistanceFunction(right-drive-speed, left-drive-speed, rate)
}
else
  burnish-distance = FALSE

if(scrubbing)
  squeegee-distance = FALSE
  squeegee-time = FALSE
else
  if(NOT squeegee-distance)
    squeegee-distance = 0
    squeegee-time = current time + squeegee-timeout
  else
    squeegee-distance = squeegee-distance +
      DistanceFunction(right-drive-speed, left-drive-speed, rate)

if(squeegee-time){
  if((squeegee-distance > safe-distance-to-squeegee) OR
    (current-time > squeegee-time))
    squeegee-safe is TRUE
  else
    squeegee-safe is FALSE
}

if(burnish-distance > safe-distance-to-burnish)
  burnish-safe is TRUE
else

```

2802

2804

2806

2808

2810

2812

2814

2816

2818

2820

2822

CONTROL

sweep, scrub, and burnish buttons polled at low level

sweep-cmd is ui-sweep-cmd
 scrub-cmd is ui-scrub-cmd
 burnish-cmd is ui-burnish-cmd
 speed = ui-speed

Fig. 23.

ENABLE

Fig. 2.5

2400

```
drive-enabled is (enabled AND (NOT(sweep-cmd XOR sweeping)) AND (NOT(scrub-cmd
XOR scrubbing)))
```

2402

DRIVE

Fig. 2.8

```
**run at speed-ramp-rate times per second**
```

```
(
  if(right-wheel-target-speed is NOT right-wheel-current-speed)
    right-wheel-current-speed = right-wheel-current-speed + minimum of:
      speed-ramp-step
      (right-wheel-target-speed - right-
wheel-current-speed)
  if(left-wheel-target-speed is NOT left-wheel-current-speed)
    left-wheel-current-speed = left-wheel-current-speed + minimum of:
      speed-ramp-step
      (left-wheel-target-speed - left-
wheel-current-speed)
  right-drive-speed = right-wheel-current-speed
  left-drive-speed = left-wheel-current-speed
)
```

2702

```
if(drive-enabled AND (NOT error)){
  if(left-handle)
    right-wheel-target-speed = ConvertSpeedFunction(speed)
  else
    right-wheel-target-speed = speed-wheel-stop
  if(right-handle)
    left-wheel-target-speed = ConvertSpeedFunction(speed)
  else
    left-wheel-target-speed = speed-wheel-stop

  if(right-handle OR left-handle)
    if(NOT driving)
      driving is TRUE
    else
      if(driving)
        driving is FALSE
  }
  else(
    right-wheel-target-speed = speed-wheel-stop
    left-wheel-target-speed = speed-wheel-stop
    if(driving)
      driving is FALSE
  )
}
```

2704

2706

2708

2710

2712

2714

2716

2718

Fig. 26

SWEEP

```

if(sweep-cmd AND (speed is NOT reverse) AND (NOT error)){
  if(time-enabled > delay-on-sweep-start)
    if(sweeper is off)
      turn sweeper on
    if(time-enabled > delay-on-sweep-lower)
      if(sweeper is up)
        sweeper to down
      else
        if(NOT sweeping)
          sweeping is TRUE
        if(time-disabled > delay-off-sweep-raise)
          if(sweeper is down)
            raise sweeper
            if(sweeping)
              sweeping is FALSE
          if(time-disabled > delay-off-sweep-stop)
            if(sweeper is on)
              turn sweeper off
        }
      else(
        if(sweeper is down)
          sweeper to up
          if(sweeping)
            sweeping is FALSE
          if(sweeper is on)
            turn sweeper off
        )
    }
  }

```

Handwritten annotations on the right side of the code block:

- 2502 (next to the first if statement)
- 2504 (next to the first if statement)
- 2506 (next to the first if statement)
- 2508 (next to the first if statement)
- (2510) (next to the first if statement)
- 2512 (next to the first if statement)

```

if(scrub-cmd AND (speed is NOT reverse) AND (NOT error)){
  if(time-enabled > delay-on-scrub-start){
    if(shroud is closed)
      open shroud
    if(scrubber is off)
      turn scrubber on
    if(vacuum is off)
      turn vacuum on
    if(squeegee is up)
      lower squeegee
    if(solenoid is closed)
      open solenoid
  }
  if(time-enabled > delay-on-scrubber-lower){
    if(pump is off)
      turn pump on
    if(scrubber is up)
      lower scrubber
    else
      if(NOT scrubbing)
        scrubbing is TRUE
  }
  if(time-disabled > delay-off-scrubber-raise){
    if(scrubber is down)
      raise scrubber
    if(scrubbing)
      scrubbing is FALSE
    if(pump is on)
      turn pump off
  }
  if(time-disabled > delay-off-scrubber-stop){
    if(scrubber is on)
      turn scrubber off
    if(solenoid is open)
      close solenoid
    if(squeegee-safe){
      if(shroud is open)
        close shroud
      if(squeegee is down)
        raise squeegee
      if(vacuum is on)
        turn vacuum off
    }
  }
}
else(
  if(scrubber is down)
    raise scrubber
  if(scrubbing)
    scrubbing = FALSE
  if(pump is on)
    turn pump off
  if(scrubber is on)
    turn scrubber off
  if(solenoid is open)
    close solenoid
  if((speed is reverse) OR error){
    if(shroud is open)
      close shroud
    if(squeegee is down)
      raise squeegee
    if(vacuum is on)
      turn vacuum off
  }
  else if(squeegee-safe){
    if(shroud is open)
      close shroud
    if(squeegee is down)
      raise squeegee
    if(vacuum is on)
      turn vacuum off
  }
}

```

2602

2604

Fig. 27

2606

2608

2610

2612

2614

2616

2618

Fig.30

BURNISH

```

if(burnish-cmd AND (speed is NOT reverse) AND (NOT error)){
  if(time-enabled > delay-on-burnisher-start){
    if(burnisher off)
      turn burnisher on
    if(burnish-safe AND driving){
      if(burnisher NOT down)
        burnisher to down
      else
        if(NOT burnishing)
          burnishing is TRUE
    }
    else
      if(burnisher NOT at middle)
        burnisher to middle
  }
  if((time-disabled > delay-off-burnish-stop) OR (NOT driving)){
    if(burnisher is down)
      burnisher to middle
    if(burnishing)
      burnishing is FALSE
    if(burnisher is on)
      turn burnisher off
  }
  if(time-disabled > delay-off-burnish-raise)
    if(burnisher NOT up)
      burnisher to up
}
else(
  if(burnisher is down)
    burnisher to up
  if(burnishing)
    burnishing is FALSE
  if(burnisher is on)
    turn burnisher off
)

```

] 2902

] 2904

] 2906

] 2908

] 2910

] 2912

] 2914